

PATENT
Application of BEALE et al.
Serial No. 09/806,713
ATTORNEY Docket No. 3315-28

AMENDMENT

In the Claims:

Please cancel claims 1 – 3, 5, 7, 8, 18, and 19. A complete listing of the claims is provided, in accordance with the provisions of 37 CFR 1.121.

1. (cancelled)

2. (cancelled)

3. (cancelled)

4. (Allowed) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive so as to provide a predetermined pump flow rate, wherein the drive signal is generated by a dc voltage supply; and at least one diaphragm, wherein the electromagnetic drive is operatively associated with the at least one diaphragm to provide conversion of electrical energy to fluid flow.

5. (cancelled)

6. (Allowed) A fluid flow control system for an electromagnetic pump, the control system comprising:

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an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive so as to provide a predetermined pump flow rate, wherein the drive signal is generated by a dc voltage supply, wherein the drive signal includes a mark-space ratio, and wherein the mark-space ratio of the drive signal defines over time an approximate half sine wave current waveform.

7. (cancelled)

8. (cancelled)

9. (Allowed) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive within a compressor, wherein the control system further comprises:

a command generator that creates a command signal corresponding to a predetermined desired fluid flow rate;

at least one sensor to ascertain the status of the system and provide at least one feedback signal;

wherein the command signal and the at least one feedback are processed by a command processor, wherein the command processor outputs a drive signal defined by a mark-space ratio, a repetition rate, and an amplitude, and wherein the drive signal controls voltage applied to compressor windings.

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10. (Allowed) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding instantaneous coil current.
11. (Allowed) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding actuator displacement.
12. (Allowed) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding bladder system pressure.
13. (Allowed) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding bladder system fluid flow.
14. (Previously cancelled.)
15. (Allowed) A fluid flow control system for an electromagnetic pump, the control system comprising;
an electromagnetic drive within a compressor, the electromagnetic drive comprising an actuator attached to a diaphragm, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive to provide linear deflection of the actuator and resultant deflection of the diaphragm to generate a desired flow rate output from the compressor.

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16. (Allowed) The fluid flow control system of claim 15, wherein the pulse width modulated drive signal is of substantially fixed amplitude.

17. (Allowed) The fluid flow control system of claim 15, wherein the actuator comprises a movable magnetic member and the electromagnetic drive comprises excitation windings, and wherein the deflection of the actuator is controlled by current in the excitation windings.

18. (cancelled)

19. (cancelled)